

Amendments to the Claims:

This following listing of claims will replace all prior versions and listings of claims in the application.

Listing of claims:

1. (Currently Amended) An implant for fixation of a bone comprising:
a shaft having a proximal end and a distal end, the shaft defining a longitudinal axis between the proximal end and the distal end; and
a plurality of blades disposed on at least a portion of the shaft and helically twisted about the longitudinal axis, the plurality of blades having a proximal end and a distal end;
wherein at least one of the blades has a variable blade width that varies in a direction along the longitudinal axis, and at least one of the blades has a variable blade height that varies in a direction along the longitudinal axis, such that a cross-section taken in a plane substantially perpendicular to the longitudinal axis of the implant between the proximal and distal ends of the plurality of blades defines both the variable blade width and variable blade height at a point along the implant.
2. (Original) The implant of claim 1, wherein the variable blade width increases in a direction from the blade proximal end toward the blade distal end.
3. (Currently Amended) The implant of claim 1, wherein the variable blade height is greatest at the blade distal end ~~at least one of the blades has a variable blade height that varies in a direction along the longitudinal axis.~~
4. (Original) The implant of claim 1, wherein at least one of the blades has a substantially constant blade width.
5. (Original) The implant of claim 1, wherein the plurality of blades twist about 90° about the longitudinal axis.

6. (Original) The implant of claim 3, wherein the variable blade height increases in a direction from the blade proximal end toward the blade distal end.
7. (Original) The implant of claim 3, wherein at least one of the blades has a substantially constant blade height.
8. (Original) The implant of claim 1, wherein the plurality of blades comprises:
at least first and second blades substantially diametrically opposed from one another about the longitudinal axis; and
at least third and fourth blades substantially diametrically opposed from one another about the longitudinal axis;
wherein at least one of the first and second blades has a variable blade width that increases in a direction along the longitudinal axis, and at least one of the third and fourth blades has a variable blade height that increases in a direction along the longitudinal axis.
9. (Currently Amended) The implant of claim 6, wherein the variable blade height ~~of the variable blade~~ is substantially zero at the blade proximal end.
10. (Original) The implant of claim 9, wherein:
at least one of the first and second blades has a substantially constant blade height; and
at least one of the third and fourth blades has a substantially constant blade width.
11. (Original) The implant of claim 10, wherein:
the first and second blades have a variable blade width that increases in a direction along the longitudinal axis, and a substantially constant blade height;
the third blade has a blade height that increases in a direction along the longitudinal axis, and a substantially constant blade width; and
the fourth blade has a substantially constant blade height, and a substantially constant blade width.

12. (Original) The implant of claim 11, wherein the first and second blades are out of phase with the third and fourth blades by about 90° about the longitudinal axis.

13. (Original) The implant of claim 1, wherein the implant is configured and dimensioned for implantation in a femoral head.

14. (Original) The implant of claim 1, further comprising a cannulation extending from the proximal end to the distal end, the cannulation configured and dimensioned to receive a guide wire.

15. (Original) The implant of claim 1, wherein the distal end is configured and dimensioned for attachment to an insertion device.

16. (Currently Amended) An implant for fixation of a bone comprising:

a shaft defining a longitudinal axis of the implant, the shaft including a bladed portion and a non-bladed portion, the bladed portion and the non-bladed portion each having a an outer diameter;

a plurality of blades disposed on the bladed portion and helically twisted about the longitudinal axis, wherein the maximum outer diameter of the bladed portion is smaller than the maximum outer diameter of the non-bladed portion.

17. (Original) The implant of claim 16, wherein the non-bladed portion includes a tapered region located substantially adjacent the bladed portion, wherein the tapered region defines a tapered region diameter that decreases in a direction toward the bladed portion.

18. (Original) The implant of claim 17, wherein the tapered region is configured and dimensioned to provide even stress distribution over the tapered region.

19. (Original) The implant of claim 17, wherein the tapered region is concave.

20. (Original) The implant of claim 17, wherein the tapered region provides uniform bending of the implant.

21. (Currently Amended) The implant of claim 17, wherein the tapered region further defines a neck diameter at a point substantially adjacent the blades, wherein the neck diameter is smaller than the blade outer diameter.

22. (Original) The implant of claim 17, wherein the implant has proximal and distal ends located on the longitudinal axis, and the bladed portion is located substantially adjacent one of the ends.

23. (Original) The implant of claim 16, wherein the implant is configured and dimensioned for implantation in a femoral head.

24. (Original) The implant of claim 16, further comprising a cannulation extending substantially along the longitudinal axis of the shaft, the cannulation configured and dimensioned to receive a guide wire.

25.(Currently Amended) An implant for fixation of a bone comprising:

a shaft ~~having a proximal end and a distal end, the shaft~~ defining a longitudinal axis of the implant, the shaft including a bladed portion and a non-bladed portion between the proximal end and the distal end;
and

a plurality of blades disposed on ~~at least a~~ the bladed portion of the shaft and helically twisted about the longitudinal axis, the plurality of blades having a proximal end and a distal end;

~~wherein at least one of the blades has a variable blade height that varies in a direction along the longitudinal axis~~ the non-bladed portion includes a tapered region located substantially adjacent the bladed portion, wherein the tapered region defines a tapered region diameter that decreases in a direction toward the bladed portion.

26. (Currently Amended) The implant of claim 25, wherein at least one of the blades has a ~~the~~ variable blade height that increases in a direction from the blade proximal end toward the blade distal end.

27.. (Original) The implant of claim 26, wherein the variable blade height is substantially zero at the blade proximal end.

28. (Original) The implant of claim 25, wherein at least one of the blades has a substantially constant blade height.

29. (Original) The implant of claim 25, wherein at least one of the blades has a variable blade width that varies in a direction along the longitudinal axis.

30. (Original) The implant of claim 29, wherein the variable blade width increases in a direction from the blade proximal end toward the blade distal end.

31. (Original) The implant of claim 25, wherein at least one of the blades has a substantially constant blade width.

32. (Original) The implant of claim 25, wherein the plurality of blades twist about 90° about the longitudinal axis.

33. (Original) The implant of claim 25, wherein the implant is configured and dimensioned for implantation in a femoral head.

34. (Original) The implant of claim 25, further comprising a cannulation extending from the proximal end to the distal end, the cannulation configured and dimensioned to receive a guide wire.

35. (Original) The implant of claim 25, wherein the distal end is configured and dimensioned for attachment to an insertion device.